



Flameout Over Evening Star

One of the advantages of SNOTEL sites, over the traditional snow course measurements, is that they don't require regular site visits to collect data. That means they can be located in a much more remote area, leaving the access to just a single maintenance trip via helicopter in the summer, or as needed if the electronics fail during the year.

It was at one of these sites, named Evening Star, in northwestern Wyoming where this story takes place. Although it's technically possible to drive a truck into Evening Star, it's a long and arduous trip. Since the site was located just a short distance, as the crow flies, from Yellowstone National Park, it usually the quickest, easiest, and safest to utilize a Park Service contract helicopter to conduct routine maintenance at this site.

Like all SNOTEL sites, the water content of the snowpack at this site is measured by snow pillows. During the winter of 1981, for some unknown reason, the snow pillow at this site went flat. Typically, when a SNOTEL site's pillow goes flat, they can only be replaced during the summer months. So, the Evening Star SNOTEL was scheduled for pillow replacement that summer.

We scheduled our week of summer SNOTEL maintenance to include all of our sites in and near Yellowstone National Park, which required helicopter access. On the day we were to work at Evening Star, we met the Park Service crew early in the morning to line out our plans and to sort and bundle up our tools and equipment we'd need to make our repairs. The materials would be set aside and carried into the site on a separate trip in a sling load. Sling load operations are conducted with no passengers, so our crew would be transported into the site and dropped off. The helicopter would return to the staging area, pick up the sling load and fly back to the site. As the helicopter hovers over the site, it would lower the sling to the ground where we would unhook it. The helicopter would then return to the staging area and wait for our radio call when we were finished with our work. We'd then reverse the whole process to remove our remaining tools, equipment and personnel from the site.

Once we had finalized our plans and sorted our materials, we all loaded into the helicopter to be shuttled into the site. All went smoothly as the three of us enjoyed the scenic flight into the site. Since there's no landing area at the site, we landed just a short distance above the site on an open bench. We could easily walk down to the site in just a few minutes. Before the helicopter left, we made sure we could

communicate with the pilot via radio, since we'd need to communicate with him when he returned with our sling load.

With limited tools, there wasn't much we could do at the site at this time, but wait for the helicopter to return with the load. After about 20 minutes, we could hear the faint hum of the helicopter's jet engines as it began to approach the site. Final preparations had been made for our ground operations. Ken Jones would man the radio and communicate with the pilot. He'd offer instructions on where to lower the sling, let the pilot know when the load was sitting on the ground, and when the sling had been disconnected from the line. My job was simple... I would wait for the load to be resting on the ground, then walk up to the load and disconnect the sling.

Within just a few minutes the helicopter's engines continued to grow louder as it approached the site, sling load dangling on the 150 foot steel cable. With the helicopter overhead, the pilot began to ease into a hover and begin to lower the load into the clearing at the site. Just then, a thought popped into my head, "Hey, this would make a great photograph. I've got just enough time to run grab my camera and take a quick shot before I need to disconnect the load." I only took a few quick steps towards my camera when I heard Ken and Ronnie Clark yelling something which I couldn't understand over the roar of the helicopter's engines. Right on top of the yells was the sound of cracking wood. I froze in my steps and looked up to see the sling load had been dropped from the helicopter and had crashed into a tree top.



The helicopter was in the midst of making a 180° turn. As it spun around, I could see a three foot long orange flame exiting out the back end of the engine. Within a couple of seconds the helicopter was heading down slope and quickly losing altitude. As it went out of site downhill I could hear timber splintering and within moments the engine died. The silence was defining as the three of us stood there with unbelievable looks on our faces. In a reflex action we all headed down slope to find the wreckage. Fortunately, we only needed to go about 100 yards to reach the helicopter. I can't tell you what a relief it was to see the pilot standing there next to what was left of the helicopter when we got down to the crash site. He was still taking off his helmet, but looked remarkably calm, considering what he'd just gone through. His only complaint was that he had some soreness along his ribcage. To our relief there was no blood or urgent medical needs for the pilot.



Once the pilot was made comfortable, our attention turned to getting rescued from the site. Fortunately, the pilot was able to radio out a "MAYDAY" message to the ground crew back at the staging area as he was going down. How he ever had the time and presence of mind to do that still amazes me. So, at least the ground crew knew something had gone terribly wrong. We tried to use the helicopter's radio, but had no luck. The crash had yielded it completely dead. Our next hope was to try to reach someone on our handheld radio, which we were utilizing to communicate with the pilot. Given the location of the site, with several mountain ridges between us and the staging area, we were unable to reach anyone on that radio.

It was a long shot, but perhaps we could reach the ground crew by hiking up towards the ridge top. With the adrenalin still flowing throughout my body, I made a dash up the slope to try to eventually get out with a radio signal. After hiking about a half mile up the slope I was finally able to reach someone on the radio. Although my signal was incredibly weak, I was able to exchange a few words here and there; to relay that the helicopter had crashed, we were all physically OK, and located at the SNOTEL site. Once that was accomplished, there was nothing else to do but wait for help. After a couple of hours of waiting, we could again hear the sound of a helicopter approaching our location. Although no one said so, I think we were all quite apprehensive about getting into another helicopter. But our choices were pretty limited. If we wanted to get out of there that day it was going to be on another helicopter.

The remainder of the trip was pretty uneventful. We returned via helicopter again the next morning to finish our work. We were accompanied by a couple of Office of Aircraft Services (OAS) inspectors who evaluated the crash wreckage and would be conducting an investigation into what went wrong. Also that day, pieces of the wreckage would be removed with other helicopters sling loading it out of the area. We were able to replace the snow pillows at the site and left the site with everything in good shape. We left the area before there was any final determination about the cause of the accident.

Epilogue: About 10 years after this incident, we had a familiar face providing instruction at one of our West-Wide Snow Survey Schools on helicopter usage and safety. I recognized the instructor when his slide show had pictures of the wreckage from this incident. It turned out he was one of the OAS inspectors who had investigated the cause of the crash. I now had a chance to ask about the results of the final investigation. It turned out that the sling load was heavier than estimated and the helicopter's jet engine had basically burned itself up in conducting that hover over the site. A lot of factors go into load calculations for sling load operations on helicopters. This incident proved to me that even the experts can miscalculate with potentially disastrous results. Fortunately for us, it involved only the loss of the helicopter and some of our equipment.

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